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Assessing the level of Knowledge and Practice of Menstrual Hygiene among Adolescent School girls in Siraha district of Nepal: A cross sectional study

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Abstract

Background: Menstrual hygiene is itself a taboo and a matter of shame to express in public in developing countries even though it is crucial for a sound reproductive health matters. This study was aimed to identify the knowledge and practice on Menstrual Hygiene among adolescent school girls in Nepal.

Methods: This cross-sectional study was conducted by using semi-structured and self-administered questionnaire. Frequency and percentage tables were used for uni-variate analysis and statistical analysis was done by bi-variate Chi-square statistics or Fisher exact tests.

Results: The adequate knowledge on menstrual hygiene (MH) was found in 85.5%. The MH practice was appropriate in 45.5%. Mother was the main source of information (37.14%) to daughters, about menstrual hygiene (MH). Respondents had no idea how to dispose off sanitary pads (51.72%) and also felt shy to use it (24.13%) and therefore its use among the girls was low. The statistical analysis revealed that level of knowledge was significantly associated with educational status (p-value=0.000) and religion (p-value=0.006), while the ethnicity (p-value>0.05) had no statistical relationship. The level of practice showed no association with all three predictors (p-value>0.05). Moreover there was found significant statistical association between the level of knowledge and practice (p-value=0.047).

Conclusion: Since, knowledge and practice levels are statistically significant, the level of knowledge about MH can be increased for better practice by intervening the awareness programs in community. Even though the school girls have better knowledge, socio-economic and cultural factors obstruct them for appropriate practice that must be assessed and simplified.

Key words: Menstrual Hygiene, Knowledge and practice, school girls, Nepal.

1. Introduction

World Health Organization (WHO) defines reproductive health as processes, functions and systems relating to the reproductive system at all stages of life (WHO, 2017). Menstruation is related to the reproductive process of life and that starts at early adolescent age in girls. It is periodic shedding of blood from human and some mammalian uterus during the child-bearing period which is accompanied by ovulation that begins with the onset of menarche at or before sexual maturity and stops at or near menopause (Canon, 1934). Adolescent age is a period of life spanning the age between 10-19 years and it is a period of rapid development and growth including major physical changes in both the sexes leading towards maturity (WHO, 1998).

Menstruation is generally considered as unclean in the context of rural society. With 82% of Nepali women living in rural area, use of traditional and unhygienic or possibly dangerous menstrual hygiene (MH) management methods push Nepali women towards marginalized reproductive health group. It is a major cause of reproductive tract infection in most of the developing countries (Verma, et al., 2013). Besides, growing adolescent girls often lack appropriate information about their reproductive health and hygiene matters. Menstrual taboos rooted to socio cultural values in Nepalese society generally create chaos among adolescent girls. As a ritual, menstruating women are forbidden to participate in any religious ceremony and also prohibited from participating in normal life activities including cooking and eating together with in a family (Adhikari, et al., 2007) and hence the hygiene aspect is always overlooked.

Inadequate facilities and traditional handling practice during menstruation increases upto 53% of absentism of girls in classroom (NFCC, 2014). Effective MH is vital to the health, well-being, dignity, empowerment, mobility and productivity of women and girls. Poor MH may cause stigma and ill health that can lead to school absenteeism and increased school drop-out rates.

Menstruation, though a natural process, has often been dealt with secrecy in many parts of Nepal. Studies have shown that the knowledge and information about reproductive functioning and reproductive health problems amongst the

adolescent is too low and hence the girls lack adequate knowledge about MH (Adhikari, et al., 2007; Mutunda, 2013; Kulhmann, et al., 2017). Attitude of parents and society about discussing the MH issues is never favourable to adolescent girls basically due to social barriers that keep them away from proper information, especially in the rural areas (Adhikari, et al., 2007). Menstruation is thus constructed as a matter of embarrassment in most cultures even though the knowledge and practice of MH is a base for a sound reproductive health. Therefore, a study to explore the level of knowledge and practices regarding MH among the adolescent school girls at Siraha district of Nepal was carried out.

2. Materials and Methods

Study site and data

The study was cross sectional, descriptive and quantitative type carried out in a secondary school of Siraha district, Golbazar-7 of Nepal. All females who already had menarch and studying at grade 8, 9 and 10 were considered for the study. Structured and self administered questionnaires were used as tools. Validity was checked by pretesting the tool on 10% of total sample, among secondary grade students of Mount Everest Secondary School at Siraha. The informed consent was taken from the school principal prior to data collection process. Objective and purpose of the research was explained and informed verbal consent was taken from each respondent before interview. The data were collected by face to face interview of the respondents during March 2015. Expectations or the threats of any kind were not imposed on the respondents. Privacy and confidentiality of the respondent's opinion was maintained during data collection and analysis. The question was asked by researcher herself in an understandable language.

The questionnaire for level of knowledge and practice were based on previous study tools (Lawan et al., 2010; Fisseha et al., 2017). For knowledge, there were 8 questions with five multiple choice answers. Each answer was dichotomized as 1 for positive answer and 0 for negative. The multiple choice answer carried score 1 for each additional answer. Here the total score was 21 which was cut off at the mean value so that mean or above that value was considered as the score for adequate level of knowledge and below mean score was the inadequate level. Similarly, to assess the practice level, a separate questionnaire set of 11 questions (two were multiple choice questions) was prepared. Each positive answer was given score 1 and 0 for the negative ones. The total score was 23 and the cut off level was taken as its mean. Finally, the score at mean or above that level was considered as appropriate practice otherwise it was inappropriate.

The analysis was done using Statistical Package for the Social Sciences (SPSS), version 16. The statistical analysis has two parts. First, the univariate analyses, that was to identify frequencies and percentages. Second, the bivariate analysis, that basically performed Chi square or Fisher exact (when the count in at least one cell of contingency table is less than 5) tests for finding out the statistical association between outcome and predictors. The results were illustrated in form of graphs and the tables.

3. Results

1. *Univariate Analysis*

Table 1 illustrates the findings on socio-demographic characteristics of the respondents. Out of 56 respondents, highest, 39.3% were of age 15, followed by 14 (26.5%) and 16 (14.3%). Regarding the educational grade, 37.5% belong to grade VIII, 30.4% were of grade IX followed by 32.1% of grade X. Majority of them followed Hinduism (71.4%) along with Buddhist (23.3%) and Muslim (5.4%). The ethnic composition showed most of the girls were dalits (48.2%) or Janajati (46.4) along with few chhetri (5.4%).

Table 1. Socio-demographic detail of respondents

S.N	Socio-demographic information (n=56)	frequency	percentage
Completed age	13	7	12.5
	14	15	26.5
	15	22	39.3
	16	8	14.3
	≤17	4	7.1
Educational grade	8	21	37.5
	9	17	30.4
	10	18	32.1
Religion	Hindu	40	71.4
	Buddhist	13	23.2
	Muslim	3	5.4
Ethnicity	Chhetri	3	5.4
	Janjati	26	46.4
	Dalit	27	48.2

Figure 1 shows, majority of the respondents (83.9%) had adequate knowledge on Hygiene. Despite the situation, only 45.5% practice its hygiene the appropriate way.

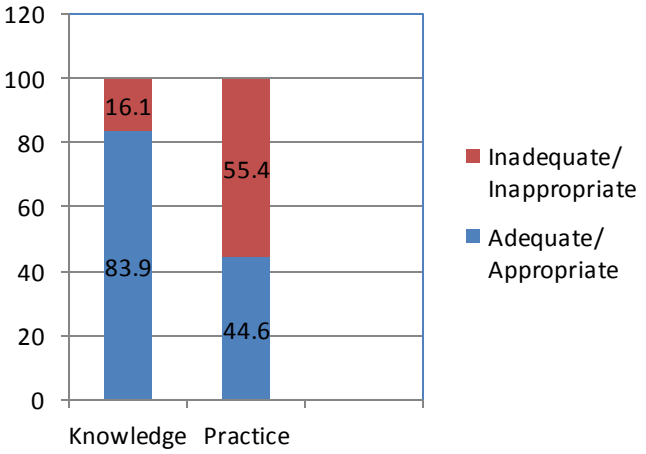

Figure 1. Frequency of Level of knowledge and Practice about menstrual hygiene

All of the respondents had heard about Menstrual Hygiene. Majority of the respondents (96.4%) knew about the negative consequences of poor M.H. Open ended multiple choice response question revealed that, based on their experience, poor MH leads to either bad smell and unclean genetalia (28.30%) or infection (22.64%) or rashes (18.23%) or itching (15.72%) or wounds and diseases (13.20%) at or around the genital parts. Some girls experience the lower abdominal pain (1.8%), which, they suppose due to poor MH(Table 2). None of them had idea about urinary tract infection or reproductive parts infection.

Table 2. Consequences on poor MH

S.N	Poor M.H	Frequency	percentage
Any consequences of poor M.H (N=56)	Yes	54	96.4
	No	2	3.6
Consequences of poor M.H (N=159)*	Bad smell and unclean parts	45	28.30
	Infection	36	22.64
	Itching	25	15.72
	Rashes appear in genital part	29	18.23
	Wounds and diseases	21	13.20
	Lower abdominal pain	3	1.88

* Multiple choice answer

Table 3 shows that to maintain hygiene, 98.2% explained of washing vagina before changing pad so as to avoid infection (34%) or bad odor and rashes around genital part (20.66%) or to be safe from diseases (24.66%).

Table 3. Necessity to wash vagina

S.N	Necessary to wash vagina before changing pad	frequency	percentage
Is it necessary to wash vagina before changing pad (N=56)	Yes	55	98.2
	No	1	1.8
Why is it necessary(N=150)*	To avoid bad odour	31	20.66
	To avoid infection	51	34
	To avoid rashes around genital part	31	20.66
	To avoid diseases	37	24.66

* Multiple choice answer

Figure 2 shows that highest 37.1% of respondents explained their mother as the primary source of information regarding menstrual hygiene.

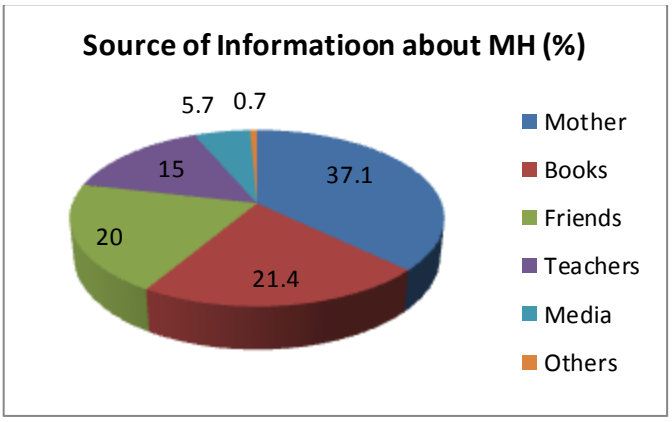

Figure 2. Sources of information about menstrual Hygiene

All the respondents admitted that they maintain MH while they menstruate. The multiple choice question revealed that they maintained hygiene different ways. Here, 24.6% used to bath at least once a day, 22.4% used to regularly change the clean undergarments while 33.3% cleaned perineal parts with clean water (Figure 3).

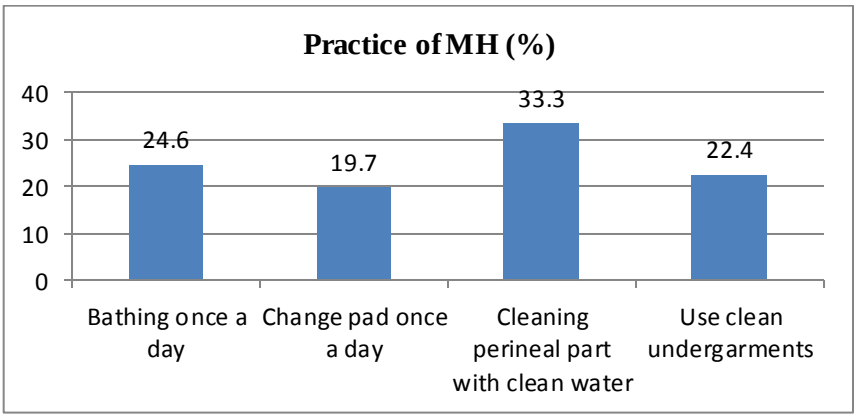

Figure 3. Different activities practiced for maintaining MH

Table 4 illustrates that, for the absorbent material or pad, most of them (51.8%) often used old cloth. These pads were mostly reused after washing with soap (86.2%) or antiseptic solution (13.8%) along with tap water (41.4%) or underground water (58.6). Among them, 79.3% dried their absorbant cloth directly in the sunlight while 20.7% dried them in dark secrete places. Regarding storage of pad 86.2% stored the absorbant cloth in separate box while others stored it randomly with other cloth (6.9%) or in bathroom (6.89%). 51.7% responded that the reason for not using sanitary pads was due to difficulty in disposal or feeling shy (24.1%) or economic reasons (6.9%). The Table also clears that the pad is being disposed by burying (33.3%) or just throwing out in open field (25.9) or burning (25.9%). About 15% girls disposed the pads in toilet (14.8%). Highest, 41.82% used to change the pad 3 times a day, followed by 39.32% who changed it two times a day.

Table 4. About the pad and MH

S.N	Description	frequency	percentage
Type of pad often used (N=56)	Cloth used in house	29	51.8
	Sanitary pad	27	48.2
Washing pad (N=29)	With soap and water	25	86.2
	with antiseptic solution	4	13.8
Type of water the cloth is being washed (N=29)	Tap water	12	41.4
	Underground water	17	58.6
Drying pad (N=27)	Dark/secret room	6	20.7
	sunlight	23	79.3
Storing pattern of pad (N=56)	With other cloth	16	28.6
	Separate box	25	44.6
	In the bathroom	15	26.8
Reason for	Expensive	2	6.9

S.N	Description	frequency	percentage
not using sanitary pad	Shyness	7	24.1
	Difficult to dispose	15	51.7
	Not know how to use	2	6.9
	Used only while travelling	1	3.4
	Used only during emergency	2	6.9
Disposing pattern of sanitary pad (N=27)	Burning	7	25.9
	Toilet pan	4	14.8
	Open field	7	25.9
	Burrying	9	33.3
Changing pad per day	1time	2	3.6
	2 times	22	40.0
	3 times	23	41.8
	>4 times	8	14.6
Bathing during menstruation	1 time	7	12.5
	2 times	2	3.6
	3 times and more	4	7.1
	daily	43	76.8

Among all 56 respondents, 76.8% stayed normal during their menstruation. However some (21.4%) were not allowed to attend social functions (Table 5)

Table 5. Traditional practice during menstruation

S.N	Description	frequency	percentage
Traditional practices that you have to follow during menstruation	Not allowed to get out of the house	1	1.8
	Not allowed to attend social functions	12	21.4
	Stayed normal	43	76.8

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2. *Bivariate Analysis*

Bivariate analysis was performed by using Chi-square tests or Fisher Exact test. The results in Table 6 revealed that class wise 57% girls from class 8 had adequate knowledge while cent percent students from class 9 and 10 had adequate level of knowledge of MH. Among the respondents, all 3 Chhetri, 21 out of 26 janjati 23 out of 27 dalit had adequate knowledge about MH. Religionwise, 92.5% Hindus, 53.8% Buddhists and all 3 Muslims had adequate knowledge on menstrual hygiene. Analysis showed that there was significant association between level of knowledge about MH and the educational status (p-value=0.000) as well as religion (0.006). while no statistical relationship was observed between level of knowledge and the ethnicity of respondents (p-value=0.841).

Table 6. Association between the level of knowledge and predictor variables (education, religion and ethnicity)

Description		Knowledge level of the respondent			p-value
		Inadequate	adequate	Total	
Educational status of the respondent (classwise)	8	9 (42.8%)	12(57.14%)	21 (37.5%)	0.000*
	9	0	17 (100%)	17 (30.4%)	
	10	0	18 (100%)	18 (32.1%)	
Total		9 (16.07%)	47 (83.92%)	56 (100%)	
Religion of the respondent	Hindu	3 (7.5%)	37 (92.5%)	40 (71.4%)	0.006*
	Buddhist	6 (46.2%)	7 (53.8%)	13 (23.2%)	
	Muslim	0	3 (100%)	3 (5.4%)	
Total		9 (16.0%)	47 (83.9%)	56 (100%)	

Ethnicity of the respondent	Chhetri	0	3 (100.0%)	3 (5.4%)	0.841
	Janjati	5 (19.2%)	21 (80.8%)	26 (46.4%)	
	Dalit	4 (14.8%)	23 (85.2%)	27 (48.2%)	
Total		9 (16.1%)	47 (83.9%)	56 (100%)	

*Significant p-values (>0.05)

As illustrated in Table 7, 33.3% girls from class 8, 52.9% from class 9 and 50.0% girls from class 10 had appropriate practice of MH. The study showed 52.5% from Hindu, 30.8% from Buddhist and none form muslim had appropriate practice of MH. Similarly, among all of the respondents, all 3 Chhetri, 38.5% janjati and 44.4% dalit had adequate level of practicing the MH. However, statistically, the education, religion and ethnicity, none had significant statistical relation with the level of practice on MH.

Table 7. Association between the level of practice and predictor variables (education, religion and ethnicity)

Description		Practice level of the respondent			p-value
		Inappropriate	Appropriate	Total	
Educational status of the respondent (classwise)	8	14 (66.7%)	7 (33.3%)	21 (37.5%)	0.413
	9	8 (47.1%)	9 (52.9%)	17 (30.35%)	
	10	9 (50.0%)	9 (50.0%)	18 (32.1%)	
Total		31 (55.4%)	25 (44.6%)	56 (100%)	
Religion of the respondent	Hindu	19 (47.5%)	21 (52.5%)	40 (71.4%)	0.071
	Buddhist	9 (69.2%)	4 (30.8%)	13 (23.2%)	
	Muslim	3 (100%)	0	3 (5.4%)	
Total		31 (53.6%)	25 (46.4%)	56 (100%)	
Ethnicity of the respondent	Chhetri	0	3 (100.0%)	3 (5.4%)	
	Janjati	16 (61.5%)	10 (38.5%)	26 (46.4%)	0.165
	Dalit	15 (55.6%)	12 (44.4%)	27 (48.2%)	
Total		31 (55.4%)	25 (44.6)	56 (100%)	

Finally, association between the level of knowledge of respondent with the level of practice about MH was identified to be statistically significant (p-value = 0.047).

Table 8. Association between the knowledge of respondent and practice of respondent on menstrual hygiene

Description		Practice level of the respondent			p-value
		Inappropriate	Appropriate	Total	
Knowledge level of the respondent	Inadequate	8 (88.9%)	1 (11.1%)	9 (16.1%)	0.047
	Adequate	23 (48.9%)	24 (51.1%)	47 (83.9%)	
Total		31 (55.4%)	25 (44.6%)	56 (100%)	

4. Discussion

Knowledge on menstrual hygiene

The study identified that 83.9% of the school girls had adequate knowledge which was contradicting to another study in Nepal that showed only 40.6% had adequate knowledge (Adhikari, et al., 2007). This difference might be due to earlier time, year 2007 and the site of study. Mother was found to be the main source (37.1%) of information regarding MH in this study, which was supported by studies in the Nagpur district of India (36.95%) (Takre, et al., 2011) and Sunsari district of Nepal (36.1%) (Sapkota, et al., 2013). Therefore mother's knowledge level can play role in maintaining menstrual hygiene in adolescent girls. The major consequences of poor menstrual hygiene, as understood by one fourth of the respondents revealed that it can lead to bad smell (28.3%)

and infection (22.6%) whereas the study conducted in Hyderabad, India showed that 33.6% of school going adolescent girls from a secondary school still suffered from infection due to poor MH (Katkuri, et al., 2014).

Practice on menstrual hygiene

This study has found that appropriate level of practice on menstrual hygiene among adolescent girls was 45.5% which was similar to 39.9% in a study by Upashe, et al. (2015) in Ethiopia. However this percentage was too high in a study done among high school students in Amhara regional state, Ethiopia (90.9%) (Gultie, et al., 2014) and in Kano, Northwestern Nigeria where it reached upto 88.7% (Lawan, et al., 2010). While Adhikari, et al., (2007) identifies too low value, 12.9% in Nepal. These differences might be due to differences in socio-cultural and economic background of the societies. In the present study, It was found that most of the girls used worn out cloth as pad that is available at home (51.8%). This result was found to be similar to the study done in Varanasi District of India which showed 49.16% of respondents used old plain cloth as menstrual absorbent (Verma, et al., 2013). But the cases in Nigeria was a little different where 89.27% of the adolescent girls used sanitary pads as absorbent during their menstrual period (Olabanjo, et al., 2014) and yet another study showed, 93.8% of the school girls in Northwestern Nigeria (Lawan, et al., 2010) used sanitary pads as absorbent which are quite contradictory to the present study. Since the use of sanitary pad is more hygienic, the school girls in African region seem to maintain better MH than the South Asian girls.

The study showed that highest 41.1% of girls changed the pad 3 times a day which was similar to the study done in India (Barathalakshmi, et al., 2014) and in Nepal (WaterAid Nepal, 2009). They found that in average, adolescent girls change absorbant pad 2 to 3 times a day. In the present study, it was revealed that majority of the girls used to dry the washed, cloth absorbent directly in the sunlight (79.31%) for reuse, which was almost double the number of 40.5% found among adolescent girls in Kolkata, India (Pandit, et al., 2014).

Regarding the level of knowledge and practice of menstrual hygiene, this study showed significant association in between. Similar result was seen in a study in Northwest Ethiopia where the school girls having better knowledge about the menstrual hygiene were significantly better in maintaining MH (Fisseha, et al., 2017).

Socio-cultural effects

In the present study, it was found that 21% of the respondents were partly restricted in the social functions which was similar to the study done in Hosakote, Rural Banglore where, 21.7% were not allowed to attend social funcitons (Madhusudan, et al., 2014). But, here, all of the respondents were allowed to attend school during menstruation which contradicted to the study in Hosakote, Rural Banglore where 10.3% of them were restricted to go to school during menstrual period (Madhusudan, et al., 2014).

The chi-square result showed that there was significant association between level of knowledge and practice (p-value= 0.049). Therefore enhancing the level of knowledge on MH can improve the practice level. Significant statistical association was seen between level of knowledge with education (p-value= 0.000) and religion (p-value= 0.006) but no association was found with ethnicity (p-value>0.05). Similarly, the hygiene practice had no statistical association with any of these three variables (p-value= 0.841). In contrast, a study in Uttar Pradesh of India suggested that girls as well as mother's education and ethnicity were significantly associated with hygiene (Malhotra, et al., 2016)

Conclusion

Since the level of knowledge has statistically significant association with practice, the knowledge of the students as well as their mother, who has vital role to educate their daughter about MH, must be well trained so that better MH can be maintained. This can be effective in keeping a sound reproductive health among adolescent girls. There should be growing attention on menstrual hygiene as a crucial aspect to achieve improved reproductive health of adolescent girls since it must be addressed at all levels of female's lives.

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